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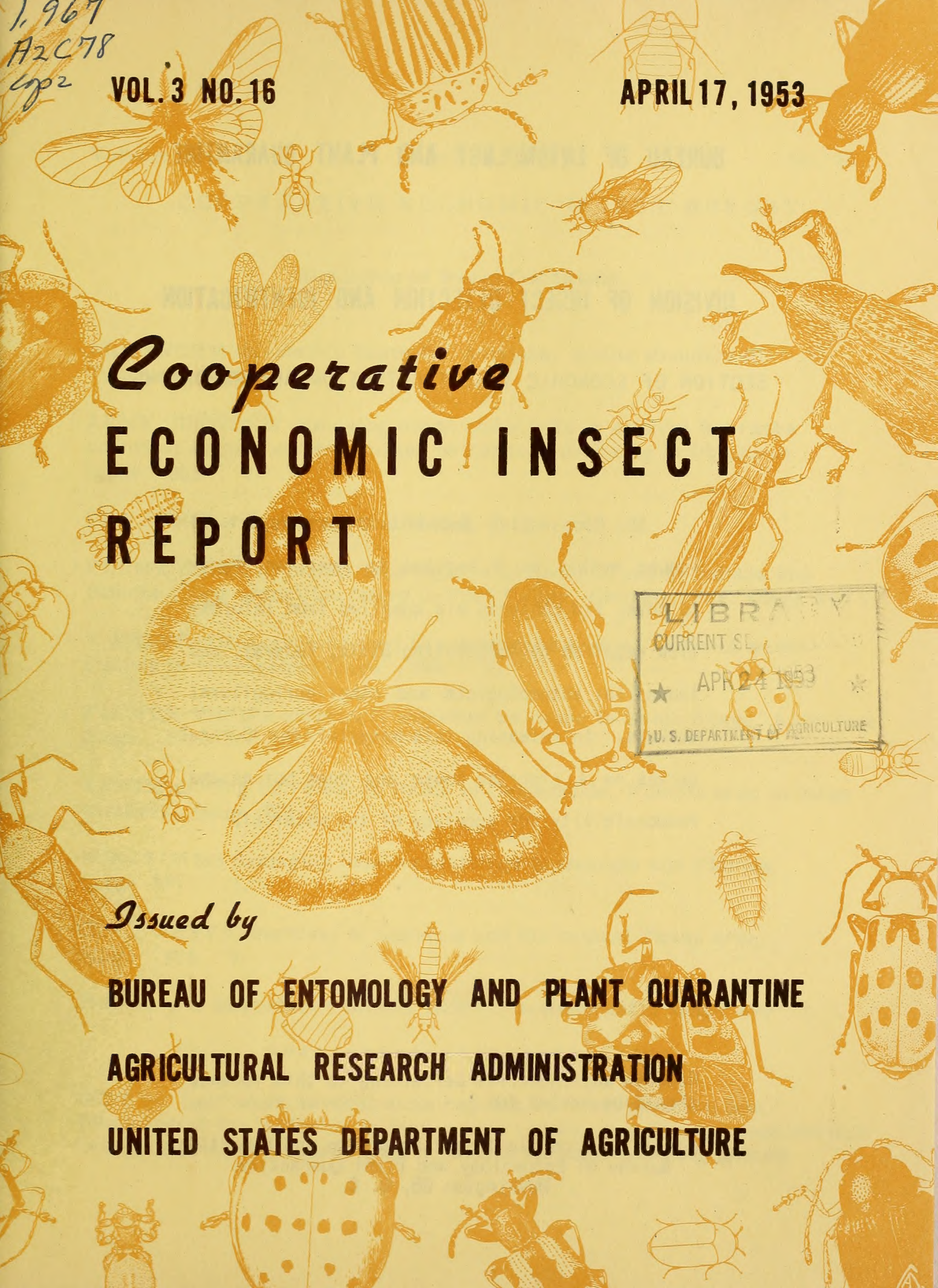

VOL. 3 NO. 16

APRIL 17, 1953

Cooperative ECONOMIC INSECT REPORT

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DIVISION OF INSECT DETECTION AND IDENTIFICATION

SECTION OF ECONOMIC INSECT DETECTION AND REPORTING

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Bureau serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 3 April 17, 1953 No. 16

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

ARMYWORM infestation heavy in Louisiana, moths abundant in Tennessee. (page 253).

ARMY CUTWORM damaging wheat and alfalfa in several Nebraska counties; infestation widespread in Kansas, declining in Oklahoma (page 253).'

PEA APHID active in several states. (page 254).

PLUM CURCULIO populations light in southern areas of Indiana and Illinois. Egg deposition heavy in Fort Valley, Georgia area. (page 257).

A WEEVIL (Mesagroicus sp.) has destroyed several acres of watermelons in Mississippi (page 260).

FLOWER THRIPS extremely abundant on roses in Baton Rouge, Louisiana. (page 261).

APHIDS moving into tobacco fields in Gainesville, Florida area in large numbers. (page 261).

WIREWORMS damaging tobacco plantings in Georgia and Florida. (page 261).

BOLL WEEVIL survival in Alabama and the central Texas area. (page 263).

Summary of important FOREST INSECT activity-1952. (page 265).

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NOTE: Last week several state reports were received too late (Wednesday) for inclusion in that week's report, thus loosing considerable value. It would be appreciated if notes from state clearing offices could be mailed in time to reach Washington not later than Tuesday morning, preferably Monday, so as to insure inclusion in the current report. Due to the printing schedule, notes received on Wednesday or later cannot appear until the following week.

* *

First Reported Season Records (by areas)

ALFALFA WEEVIL eggs found in Washington County, Idaho, March 16. ARMYWORM moth collected in Delaware April 8. MEADOW SPITTLEBUG hatching at Carpenter, Ohio, April 1; Wooster, April 9. LESSER PEACH TREE BORER spring-brood moths observed at Fort Valley, Georgia, March 31. STINK BUGS and TARNISHED PLANT BUG recorded at Wooster, Ohio, April 9. PLUM CURCULIO adults jarred March 17 at Trenton, South Carolina. ROSY and APPLE APHIDS noted April 2 in Saratoga County, New York; April 8 in Onodaga County. First hatching of rosy apple aphid in Niagara County, New York, April 6. RED-BANDED LEAF ROLLER egg mass noted in Dutchess County, New York, April 9. EUROPEAN RED MITE hatching April 6 in Saratoga County, New York. First COLORADO POTATO BEETLE larvae at Charleston, South Carolina, April 8; adults at Albany, Georgia, March 24. Adult IMPORTED CABBAGEWORM observed at Union Gap, Washington, April 5.

First Reported Records

A GROUND PEARL (probably Margarodes meridionalis), new to South Carolina, reported from Charleston area. BLACKBERRY WHITEFLY collected in Kern County, California, March 13. BROWN-BANDED ROACH found for first time in Idaho, at Boise, March, 1952.

WEATHER OF THE WEEK ENDING APRIL 14, 1953

Cold, winter-like conditions from the western portions of the Great Plains to the Pacific Coast were the main weather feature of the week. In the far western interior average temperatures for the week ranged from 9 degrees to 15 degrees below normal. Hard freezes and moderate to killing frost occurred over large areas, and local or extensive damage to early fruit was reported by every far western State except Montana and Wyoming. Also, there were a few reports of frost damage to spring wheat in Washington. A record low April temperature of 9 degrees for Winneucca, Nev., was recorded on the 8th, and 32 degrees for Fresno, Calif., on the 9th exceeded its former April record of 34 degrees in 1908. Killing frost which occurred in scattered districts throughout the Central Valley of California was one of the most severe on record in some sections.

Several feet of snow occurred in some mountain areas of Utah, and up to 2 feet fell on the eastern edge of the Great Salt Lake Valley immediately north of Salt Lake City. Snowfall occurred over large areas of the Northwest with heavy amounts at high elevations in the northern Rockies. Moderate to heavy snows fell in the western portions of the central and northern Great Plains during the first half of the week. Heaviest amounts, that ranged from 10 to 13 inches, fell in northwestern Kansas in an area extending from Logan to Trego County. These snows were followed by a period of low temperatures with freezing as far south as the Texas Panhandle. On the morning of the 12th Goodland, Kans. recorded a minimum of 10 degrees and Amarillo, Tex., 30 degrees, but only slight damage to tender vegetables and fruit was reported.

By the end of the period colder weather had spread to the Atlantic Coast, and below-freezing minima were recorded in northern Arkansas and the Ohio Valley. Lower temperatures in New England were preceded by a late-season snowstorm, with heaviest amounts falling in Massachusetts and southern New Hampshire. At 7:30 a.m. on the 14th, Boston, Mass. reported 2 inches on the ground, Worcester, Mass., 5 inches, and Manchester, N.H., 4 inches. The 2inches at Boston was the heaviest snowfall this late in the spring season during the last 35 years.

Precipitation for the week was generally less than one-half inch west of the Mississippi River, with much of the lower Great Plains and Southwest receiving little or none. In parts of New Mexico, southeastern Colorado, and western Texas the soil remained extremely dry; and occasional strong winds caused soil erosion and some local crop damage. East of the Mississippi River precipitation totals for the week ranged from 1 to over 4 inches in the Appalachian and Atlantic coastal regions and from one-half to an inch elsewhere. In the Northeast the heavy rainfall kept the soil too wet to work, and most streams remained at high levels. Severe thunderstorms with hail occurred in the Midwest on the 9th and 10th, and tornadoes were reported in east-central Illinois and central Indiana. (Summary Supplied by U.S. Weather Bureau).

WEATHER BUREAU'S 30-DAY OUTLOOK
mid-April to mid-May, 1953 *

The Weather Bureau's 30-day outlook for the period from mid-April to mid-May calls for temperatures to average below seasonal normals over the northern half of the nation and also over much of the Southwest. Above normal temperatures are expected in the South Atlantic and Gulf States. Elsewhere near normal temperatures are indicated.

Precipitation is expected to exceed normal over the northern half of the country, but subnormal rainfall is indicated over the Southwest. Elsewhere about normal rainfall is predicted.

* This report released by the Weather Bureau on April 15, 1953.

A more detailed weather outlook-Average Monthly Resume and Outlook - is prepared by the Weather Bureau. To subscribe to this publication address application, with P. O. money order or check payable to Treasurer of the United States, and mail to Superintendent of Documents, Government Printing Office, Washington 25, D. C. Subscription price is $4.80 per year or $2.40 for six months, postpaid; minimum subscription six months.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS (Acrididae) - CALIFORNIA - Unidentified species reported in range land in Humboldt County during March. One to six per square yard in range land near Wheeler Ridge in Kern County. (S. Lockwood). ARIZONA - On the San Carlos Indian Reservation, Aulocara elliotti, one of the three economic species in areas, started hatching about March 20, which is about two weeks earlier than in 1952. Species dominance, during first week of April, was as follows: A. elliotti, 60%; Psoloessa texana, 27%, Xanthippus corallipes, 12%; and Melanoplus species, 1%. Total nymphal populations were exceedingly light and spotted. Twenty-two hundred net sweeps at the ten locations checked gave only 97 nymphs. MONTANA - Two overwintering grasshopper species, Eritettix tricarinatus and Xanthippus corallipes, averaging about 1 1/2 per square yard, observed in local areas of Rosebud County, during week ending March 27. WYOMING - A. elliotti egg pods collected near Chugwater on March 13 hatched March 26. These pods were held at an average temperature of 76 degrees during the intervening period. TEXAS - Populations of first instar Melanoplus differentialis found at two isolated survey stops in Freestone and Milam Counties on March 28. Unhatched M. differentialis eggs examined in this same area in all stages of development with the greatest percentage in the coagulated stage. (J. R. Dutton).

MORMON CRICKET (Anabrus simplex) - CALIFORNIA - Hatching on eastern side of Lassen County started in March. Poison bait applied. (S. Lockwood). Emergence in Long Valley area north of Hallelujah in Sierra and Lassen Counties nearing completion last week in March. Nymphs, predominately second and third instars, numbered from ten to over 100 per square yard. This dense population covered several hundred acres of land. Baiting by ground equipment has begun in that area. Kills are reported as excellent. (J. R. Dutton). UTAH - Hatch 10 to 15 percent complete on Stansbury Island. All in first instar April 6. No hatching in Vernon Creek area April 4. Largest outbreak expected this year in Toole, Juab, Daggett and Uintah Counties. (Thornley and Knowlton).

EUROPEAN CORN BORER (Pyrausta nubilalis) - DELAWARE - Overwintered larvae beginning to pupate in Sussex County. (Late News, Univ. Del.). KANSAS - Mortality of overwintering larvae 41 percent in Riley County. (R. C. Smith).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - KANSAS - Winter mortality of overwintering larvae in Stafford and Reno County area 31 to 50 percent, which is less than last year. (R. C. Smith).

CORN EARWORM (Heliothis armigera) - LOUISIANA - Infestation on alfalfa, crimson and white clovers. Averaged 3 per 100 sweeps on crimson clover at Homer, 3 1/2 on alfalfa at Shreveport, Coushatta and Natchitoches. Heavy infestation on lupine at Baton Rouge. (C. E. Smith).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Rather plentiful (5 in 50 sweeps) in small field in Dorchester County. (T. L. Bissell). NEBRASKA - Adults abundant and active in most alfalfa fields examined. (R. L. Wallis, April 6). IDAHO - Gravid females collected March 6 in Idaho County, March 7 in Owyhee County. Several eggs found in old alfalfa stems March 16 in Washington County, which is a month earlier than in 1952. (H. C. Manis). UTAH - Damage occurring in many untreated fields in earlier areas. (G. F. Knowlton).

CLOVER LEAF WEEVIL (Hypera punctata) - PENNSYLVANIA - Active in clover in Beaver County and southeast area. (Adams and Menusan). OHIO - Light infestation on red clover at Wooster. High incidence of diseased larvae. (C. R. Weaver). ILLINOIS - Unusually abundant, often running 15-20 larvae per plant in clover and alfalfa. Disease present but insufficiently active due to cold weather to control infestation. (G. C. Decker). KANSAS - Small, overwintering larvae readily found. (R. C. Smith). UTAH - Some damage to alfalfa and well-developed larvae at Provo. (G. F. Knowlton).

SWEETCLOVER WEEVIL (Sitona cylindricollis) - NEBRASKA - Reported injuring second-year sweetclover in Adams County. (R. E. Hill, April 6). KANSAS - Adults readily found around clumps of clover. Some damage to young sweetclover. (R. C. Smith).

LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) - PENNSYLVANIA - Adults active in clover fields in Beaver County. (L. E. Adams).

AN ARMYWORM (Leucania latiuscula) - FLORIDA - Abundant in some cane fields in Everglades area. As many as ten larvae or more per plant, under trash around stubble, noted. (Genung and Questel).

ARMYWORM (Pseudaletia unipuncta) -DELAWARE- One adult collected (at light) April 8 at Newark. (Late News, Univ. Del.) TENNESSEE- Light trap catches the week of April 6 showed an abundance of moths. (W. W. Stanley). LOUISIANA- Heavy infestation throughout State. Considerable acreage of sugarcane defoliated in Iberia Parish. About 100 acres of rye grass and clover totally destroyed in St. Landry Parish. Rye grass and oats infested in other areas. Larvae range from mature to second and third instars in northern part of State. (Cockerham & Roussel).

CUTWORMS (Phalaenidae)-LOUISIANA- Reported in damaging numbers over the State, especially abundant in southwestern areas. (K. L. Cockerham). Heavy outbreak of variegated cutworm (Peridroma margaritosa)on white clover in St. Landry Parish; light infestation in Red River Valley area between Alexandria and Shreveport. (C. E. Smith). TENNESSEE- Cutworm moths taken in light trap during week of April 6. (W. W. Stanley). TEXAS Several fields of corn and milo must be replanted because of damage in Victoria County. Poisoned fields have little damage. (D. B. McCombs). FLORIDA - Populations fairly high in Everglades area. (Genung and Questel).

ARMY CUTWORM (Chorizagrotis auxiliaris) - OKLAHOMA - Damage declining. (C. F. Stiles). NEBRASKA - Fairly widespread and damaging wheat in Duel and Garden Counties and alfalfa in Dawson, York and Scotts Bluff Counties. Infestations averaging up to 8 per square foot in Scotts Bluff County. Some control measures are being undertaken. (Bare, Roselle, Wallis, April 6). KANSAS - Most frequently reported insect in State. Somewhat larger numbers than last year in wheat, alfalfa and grass over most of the State, but no general outbreak. Injury slight thus far, but control operations rather widespread. (R. C. Smith).

CHINCH BUG (Blissus leucopterus) - TEXAS - Light infestation on vetch and small grain in 5-county area in Northeast Texas. (C. F. Garner). OKLAHOMA - Active in Bryan County in much larger number than last year. (C. F. Stiles).

TARNISHED PLANT BUG (Lygus lineolaris) - LOUISIANA - Heavy infestation on alfalfa and crimson clover in Red River Valley and at Homer, Claiborne Parish. (L. D. Newsom). TEXAS - Light local infestation on alfalfa, vetch and grain in 5-county area of northeast Texas. (C. F. Garner).

SPITTLEBUGS (Cercopidae) - DELAWARE - Masses appearing generally on alfalfa and clovers. (Late News, Univ. Del.) - MARYLAND - Populations increasing. Common of alfalfa and Ladino clover in Caroline County, lighter on same crops in Prince Georges County. (T. L. Bissell). PENNSYLVANIA - Meadow spittlebug (*Philaenus leucophthalmus*) nymphs general in southern two-thirds of State. Control measures starting in most areas. (J. O. Pepper). OHIO - Meadow spittlebug hatching first observed at Carpenter April 1, at Columbus and Wooster April 9. (C. R. Weaver). ILLINOIS - Hatching as far north as Champaign. (G. C. Decker).

LEAFHOPPERS (Cicadellidae) - TEXAS - Light local infestation on small grain and vetch in 5-county area of northeast Texas. (C. F. Garner). LOUISIANA - Heavy infestation of *Empoasca* sp. in some alfalfa fields in Red River Valley area. Light infestations on crimson and white clovers. (L. D. Newsom).

SIX-SPOTTED LEAFHOPPER (*Macrosteles fascifrons*) - UTAH - Active and generally infesting grasses in northern areas. (G. F. Knowlton).

PEA APHID (*Macrosiphum pisi*) - DELAWARE - Causing damage to old stands of alfalfa. MARYLAND - Apparently not increasing in Talbot, Caroline and Prince Georges County. Parasitism noted. (T. L. Bissell). PENNSYLVANIA - Infesting clover fields in Beaver County. (L. E. Adams). TENNESSEE - Large numbers in almost all alfalfa fields. (R. P. Mullett). TEXAS - Light isolated infestations on vetch in Kaufman County. (C. F. Garner). Light infestation on alfalfa at Wellington. (J. W. Thomas). Severe infestation on alfalfa in Lubbock County. (W. L. Owen). ILLINOIS-Benefitted by prolonged cool weather, populations have risen to abnormally high levels, frequently several hundred aphids per sweep on clover and alfalfa. Decline expected with warm weather. (G. C. Decker). KANSAS - Activity light. (R. C. Smith). UTAH - Damaging populations in Salt Lake County alfalfa. Spotted damage in Utah and Washington Counties. Populations apparently increasing rapidly in Washington County. (G. F. Knowlton).

ENGLISH GRAIN APHID (*Macrosiphum granarium*) - OKLAHOMA - Abundant in wheat in Grant County. Infestation heavier than during the corresponding period of 1952. (R. G. Dahms).

APHIDS (Aphidae) - TEXAS - Severe infestation on grain sorghum in Petronilla. (R. E. Nolan). KANSAS - Populations, including greenbug, continue light. (R. C. Smith).

APPLE GRAIN APHID (*Rhopalosiphum prunifoliae*) - DELAWARE - Causing serious damage to barley at Millsboro. (Late News, Univ. Del.). OKLAHOMA - Abundant (500 or more per linear foot) in Garfield, Grant, and Alfalfa Counties. (Stiles and Dahms).

YELLOW SUGARCANE APHID (*Sipha flava*) - FLORIDA - Increasing on pangola grass pastures in the Everglades, but not as serious as in fall and winter. Also injurious populations on sugarcane in the same area. (Genung and Questel).

GREENBUG (*Toxoptera graminum*) - TEXAS - Light infestation on wheat in Collingsworth County. (J. W. Thomas). OKLAHOMA - Causing some injury to wheat in localized areas around Garber, Hillsdale, Nash, Jet, and Geary, but infestations seem to be declining. (Stiles and Dahms).

CLOVER MITE (*Bryobia praetiosa*) - MISSISSIPPI - Damaging clover near pecan trees in Smith County. (R. E. Hutchins).

SPIDER MITES - TEXAS - Light infestation on wheat in Foard County. (J. E Burkett). Light to medium widespread infestation on wheat in Harley County. (E. L. Dysart).

CABBAGE LOOPER (*Trichoplusia ni*) - TEXAS - Light infestation on vetch and alfalfa in 5 county area of northeast Texas. (G. F. Garner).

LOOPERS - LOUISIANA - Heavy infestation on legumes in Red River Valley. (L. D. Newsom).

WHITE GRUBS - SOUTH CAROLINA - Damage to fescue has been especially noticeable in several counties. (Farrar, Woodle, Turner, Nettles).

A GROUND PEARL (prob. *Margarodes meridionalis*) - SOUTH CAROLINA - Specimens collected beneath centipede grass during fall of 1952 have been tentatively identified. Positive identification could not be made due to the lack of adult females in the collection. This is the first record of this insect in South Carolina. (W. J. Reid).

MEADOW MAGGOT (Tipulidae) - ILLINOIS - Reported damaging 3 fields of lespedeza in Richland County April 7. (G. C. Decker).

GREEN CLOVERWORM (Plathypena scabra) - LOUISIANA -Heavy infestation on crimson and white clover and alfalfa in Red River Valley. (L. D. Newsom).

FRUIT INSECTS

APHIDS (Aphidae) - NEW YORK - First rosy and apple aphids observed April 2 in Saratoga County, April 8 in Monroe County. Rosy apple aphid readily found in untreated orchard April 8 in Onondaga County; first hatching observed in Niagara County April 6. (Corey, Malchoff, Vuillemot, McNicholas). NEW JERSEY - Abundant in apple orchards where no control measures applied. Mostly apple grain aphid (Rhopalosiphum prunifoliae), but some apple aphid (Aphis pomi) and rosy apple aphid (Anuraphis roseus). (A. J. Farley). MARYLAND - Black cherry aphid (Myzus cerasi) abundant on a cherry tree in Prince Georges County. Occurring on peach trees in Montgomery County. (T. L. Bissell). PENNSYLVANIA - Rosy apple aphid hatching in northwestern section. Apple grain aphid present in Erie County. (L. E. Adams). KANSAS - Hatching began about March 23 on apple in northeast area. Numbers small. Egg counts in fall of 1952 indicated light but general infestation. (R. C. Smith). IDAHO - Advanced Rhopalosiphum spp. nymphs collected from strawberries in Gem and Canyon Counties March 5. (H. C. Manis). UTAH - Apple aphid very abundant in Utah County. Woolly apple aphid (Eriosoma lanigerum) unusually numerous for so early in season in Utah County. Green peach aphid (Myzus persicae) fairly numerous on peach in northern area. (G. F. Knowlton).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Indications that oviposition was heavy between April 1 - 7 in Vincennes area. (D. W. Hamilton). NEW YORK - Not as plentiful as last year in Ulster County; first egg mass found in Dutchess County, April 9; strong flight April 9 in Columbia County. (Palmer, Sergeant, Buckley).

APPLE CURCULIO (Tachypterellus quadrigibbus) - SOUTH CAROLINA - Several jarred from peach trees near Trenton March 17. (Cochran).

PLUM CURCULIO (Conotrachelus nenuphar) - INDIANA - Indications that populations are very light as in 1950 and 1952 in commerical orchards in Vincennes area. (D. W. Hamilton). ILLINOIS - Either due to cool weather or to very light carryover or both, there are very few curculios in commerical orchards in southern areas. (S. C. Chandler). SOUTH CAROLINA - First adults jarred from peach trees at Trenton March 17. Up to March 27, overwintering population appeared to be about the same as in 1953. (Cochran). GEORGIA - Egg depostion heavy, in Fort Valley area. (O. I. Snapp, April 6).

EUROPEAN RED MITE (Metatetranychus ulmi) - DELAWARE - Eggs abundant, even where dormant or delayed dormant sprays have been applied. (Late News, Univ. Del.) NEW YORK - Observed hatching April 6 in Saratoga County. (F. Corey).

CLOVER MITE (Bryobia praetiosa) - NEW YORK - Found on fruit buds in Ulster County. (W. H. Palmer). CALIFORNIA - Heavy infestation on almonds during March in Colusa County. Light to serious on plum in Kern County. (S. Lockwood).

TARNISHED PLANT BUG (Lygus lineolaris) - INDIANA - Numerous and continued control recommended in Vincennes area. (D. W. Hamilton). ILLINOIS - Probably due to falling petals numbers greatly reduced in Jackson and Union Counties. (S. C. Chandler). OHIO - First of season recorded on peaches at Wooster April 9. (R. W. Rings).

STINK BUGS (Pentatomidae) - INDIANA - Populations continue light in Vincennes area. (D. W. Hamilton). OHIO - Stink bugs (Euschistus sp. and Brochymena quadri pustulata) recorded on peaches at Wooster for the first time this season April 9. (R. W. Rings).

LESSER PEACH TREE BORER (Synanthedon pictipes) - GEORGIA - Spring-brood moths observed in peach orchards near Fort Valley March 31. General infestation heavier than average year. (O. I. Snapp).

FIG SCALE (Lepidosaphes ficus) - CALIFORNIA - New infestations reported from eleven trees in San Diego County during March. This in the first known infestation in that county. Numbers greatly reduced in Merced County, possibly due to parasitism. (S. Lockwood).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - OHIO - Moderate infestation in three orchards in northeastern area. (R. W. Rings). OKLAHOMA - Large numbers in northcentral areas. (D. O. Howell). CALIFORNIA - Heavy infestation in plum in Kern County during March. Several stages found in pear orchards in Tuolumne County. Only first instars in prune orchards in Colusa County. (S. Lockwood).

TERRAPIN SCALE (Lecanium nigrofasciatum) - OHIO - Moderate infestation in one orchard in eastern Ohio. (R. W. Rings).

PACIFIC FLATHEADED BORER (Chrysobothris mali) - CALIFORNIA - Heavy infestations in one and two year old almond trees during March in Colusa County. (S. Lockwood).

TENT CATERPILLARS - NEW YORK - Observed hatching April 7 in Saratoga County. (F. Corey); April 4 in Ulster County. (W. H. Palmer).

SPRING CANKERWORM (Paleacrita vernata) - NEW YORK - Noted on opening apple bud April 8 in Monroe County. (G. C. Malchoff).

VEGETABLE INSECTS

BEET LEAFHOPPER (Circulifer tenellus) - ARIZONA - Migrations from desert areas into cantaloup fields of Salt River Valley began the middle of March and are still continuing. (Hills and Taylor).

APHIDS (Aphidae) - DELAWARE - Cabbage aphid (Brevicoryne brassicae) abundant on kale grown for seed at Ellendale and young cabbage at Georgetown. (Late News, Univ. Del.) VIRGINIA - Green peach aphid (Myzus persicae) light on spinach in Norfolk area. (Brubaker, Greenwood, Hofmaster). CALIFORNIA - Unidentified species infesting 30 acres of lettuce in Ventura County. Celery aphid (Aphis heraclella) generally infesting celery in Venice area of Los Angeles County. Pea aphid (Macrosiphum pisi) infesting large acreages of peas in Ventura County; aphicides being applied. Ten acres of peas in Orange County heavily infested. Cabbage aphid infestations occur in cabbage in Los Angeles and Orange Counties, but under control in most fields due to regular treatments. (R. E. Campbell).

BEAN LEAF BEETLE (Cerotoma trifurcata) - SOUTH CAROLINA - Moderately abundant in Charleston area and causing slight injury to young snap beans. (Reid, Cuthbert, Deen).

BEAN LEAF ROLLER (Urbanus proteus) - FLORIDA - Light populations on green beans in Everglades area. (Genung and Questel).

MEXICAN BEAN BEETLE (Epilachna varivestis) - SOUTH CAROLINA - Adults becoming more abundant in Charleston area; no eggs observed. (Reid, Cuthbert, Deen).

SEED-CORN MAGGOT (Hylemya cilicura) - SOUTH CAROLINA - Caused more damage than usual to sprouting snap beans during past two weeks, probably result of abnormally cooler, wetter weather. Replanting necessary in some fields. (Reid, Cuthbert, Deen). CALIFORNIA - Damage up to 50 percent to squash in Riverside County during March and considerable damage to planted potato seed pieces. Five to ten percent damage to untreated bean, cucumber and squash seed in San Diego County. (S. Lockwood).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - SOUTH CAROLINA - First eggs April 6, larvae April 8 in Charleston area. (Reid, Cuthbert, Deen). GEORGIA - First adults of season observed on Irish potatoes at Albany, March 24, (M. R. Osburn). Injuring tomato plants in Ben Hill and Irwin Counties. (P. G. Geiger).

CABBAGE MAGGOT (Hylemya brassicae) - TENNESSEE - Local, spotted infestations in commercial cabbage in East Tennessee. (R. P. Mullett).

CABBAGE CATERPILLARS - DELAWARE - Imported cabbageworm (Pieris rapae) adults observed on wild mustard near Lincoln and Rising Sun. (Late News, Univ. Del.). SOUTH CAROLINA - Populations increasing in Charleston area, but still generally light. (Reid, Cuthbert, Deen). WASHINGTON - First adult imported cabbageworm observed at Union Gap April 5. (E. W. Davis).

SPITTLEBUGS (Cercopidae) - DELAWARE - Masses on unfolded new leaves in strawberry plantings around Bridgeville. (Late News, Univ. Del.). MARYLAND - Infesting strawberries in Prince Georges County. (T. L. Bissell).

BLACKBERRY WHITEFLY (Trialeurodes ruborum) - CALIFORNIA - Not known to occur in State previous to collection in Kern County, March 13; however, a survey shows the insect to be rather widespread in central California. (H. H. Keifer).

A WEEVIL (Measgroicus sp. near herricki) - MISSISSIPPI - Adults have destroyed several acres of watermelon plants in a low area in Jackson County. (G. L. Bond).

ONION THRIPS (Thrips tabaci) - VIRGINIA - Light to moderate on green onions being harvested in Norfolk area; injury light. (Brubaker, Greenwood, Hofmaster). CALIFORNIA - Infestations widespread in onion fields of West Covina area in Los Angeles County; some damage to younger fields. (R. E. Campbell).

CYCLAMEN MITE (Tarsonemus pallidus) - CALIFORNIA - Appearing on strawberries near Redondo in Los Angeles County. (R. E. Campbell).

ARMYWORMS - CALIFORNIA - Heavy damage from unidentified species occurred in strawberry fields in Santa Cruz County. (S. Lockwood).

FLOWER THRIPS (*Frankliniella tritici*) - LOUISIANA - Extremely abundant on roses in Baton Rouge.

APHID ON TOBACCO- FLORIDA - Winged aphids moving into tobacco fields in Gainesville area in exceptionally large numbers. One hundred plants examined in experimental planting showed 109 winged *Myzus persicae*, 27 winged *Macrosiphum solanifoliae* and 23 individuals of other species. Many of the *Macrosiphum* and *Myzus* individuals were producing young on the plants. Five established colonies of *M. persicae* were noted. (A. N. Tissot).

WIREWORMS (Elateridae) - GEORGIA - Damaging stems of newly-set tobacco plants in Tift, Mitchell and Candler Counties. (L. W. Morgan). FLORIDA - Moderate heavy infestations in some plantings of shade-grown tobacco in Gadsden County area. (Guthrie and May). NEW YORK- Damaging vegetable transplants in Monroe County. (W. J. Klotzbach).

HORNWORMS (*Protoparce* spp.) - FLORIDA - A few observed on tobacco in Gainesville area; one larva about an inch in length noted. (A. N. Tissot).

FLEA BEETLES (*Epitrix* spp.) - MARYLAND - Attacking newly-emerged tobacco beds in Prince Georges County. (T. L. Bissell).

LEAF MINERS - FLORIDA - Populations, principally *L. pusilla*, fairly heavy on some crucifers, celery and beans in Everglades area. (Genung and Questel).

INSECTS AFFECTING MAN AND ANIMALS

BROWN-BANDED ROACH (*Supella supellectilium*) - IDAHO - First record of this insect occurring in Idaho was made from specimens submitted from Boise March 3, 1952. Collected for the first time at Moscow March 24, 1953, and at Nampa April 3, 1953. Both collections made in dwellings. Apparently this roach is becoming well established in Idaho. (H. C. Manis).

IMPORTED FIRE ANT (Solenopsis saevissima var. richteri) - GEORGIA - Discovered for first time near Albany in Dougherty County, April 7. (G. H. Culpepper).

HORN FLY (Siphona irritans) - TENNESSEE - A few local infestations on cattle in Knox County. (R. P. Mullett). OKLAHOMA - Appearing earlier than usual. Average counts of 400-500 common over much of State. (D. C. Howell).

SHEEP BITING LOUSE (Bovicola ovis) - IDAHO - Collected from sheep March 27 in Latah County. According to available files, this is the first record of this louse occurring in Idaho in recent years. (H. C. Manis).

SCREW-WORM (Callitroga hominivorax (Coquerel)* - TEXAS - Cases on livestock on range and farm in Borden County. (G. A. Sealy).

BUFFALO GNATS (Simuliidae) - LOUISIANA - Reported very abundant over area of about 50 square miles in the Natchitoches area. (Cockerham and Roussel).

FOREST INSECTS

PALES WEEVIL (Hylobius pales) - MISSISSIPPI - Larvae supposed to be young of this species reported killing young pines in Montgomery County. (R. E. Hutchins).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - TENNESSEE - Large numbers over the State, mainly on wild cherry. (R. P. Mullett). GEORGIA - Heavy damage to fruit and shade trees in Jasper County, April 3, (J. H. Milner). Moderate to heavy infestations general on wild cherry in Fulton and DeKalb Counties, (W. E. Blasingame).

CALIFORNIA TORTOISE SHELL (Nymphalis californica) - CALIFORNIA - Reported heavy locally in Humboldt County during March. (S. Lockwood).

A CURCULIONID (Pachylobius picivorus) - GEORGIA - Girdling and puncturing young pine seedlings in Fitzgerald area. (P. G. Geiger).

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*1953 Sabrosky, C. W. Ent. Soc. Washington, Proc. 55(1): 36-38

ELM CALLIGRAPHA (Calligrapha scalaris) KANSAS - Reported abnormally plentiful, locally, in Morris County. Also occurring in Finney County. (R. C. Smith).

JUNE BEETLES (Scarabaeidae) - LOUISIANA - Heavy flight throughout northwestern part of State, defoliating red and post oaks and pecans. (Newsom and Floyd).

COTTON INSECTS

Cotton Insect Problems in Lower Rio Grande Valley, Texas: COTTON FLEAHOPPER reported from all sections. Reports varied from light infestations in the upper Valley to heavy infestations in the lower Valley, and Willacy County. BOLL WEEVILS reported all over the area. Degree of infestations varies from a 25% square infestation down to 1% and 2%. Weevils also reported from terminal counts in fields not yet squaring. BOLLWORMS also reported from all areas. Control measures are being applied in many cases, especially where fleahoppers are occurrring simultaneously with the bollworm. SPIDER MITES reported from Rio Hondo area, but population very light. (R. D. Griffith).

TOBACCO THRIPS (Frankliniella fusca) - LOUISIANA - Infestation extremely light compared to those of recent years. None found on cotton in Cheneyville area, and not more than about 1 percent as many on crimson and white clovers as at this time last year. (L. D. Newsom).

Boll Weevil Survival:

ALABAMA - Collections have been made from woods trash adjacent to cotton fields in four counties. Numbers of live weevils varied from none in 12 samples in Limestone County in north central Alabama to 6,292 weevils per acre from 10 samples collected in Lee County in east central Alabama. An average of 403 weevils per acre was collected from 12 samples in Marion County in northwestern Alabama and 963 in 15 samples in Marion County in northeastern part of the State. The population in Lee County in December was double that found in late March. (F. S. Arant).

WACO, TEXAS AREA - Each year beginning in 1939, five hundred boll weevils collected from fields have been installed on or about November 1 in each of 10 cages located in a wood lot for winter survival studies. Hibernating material in five cages consists fo oat straw and in the remainder woods trash and debris. Removal of surviving boll weevils from the cages begins on May 1 of each year. Weevil activity during the first three months of 1953 was very similar to that of 1950 when the seasonal survival was 4.3 percent. Survival in the cages was high in 1941, 1944, 1945, 1946, 1950 and 1952. In only one year since the study has been in progress has survival been high when weevil activity was low during the 3 month period. This occurred in 1952. The low activity during this period of 1952 is attributed to the extremely dry weather which occurred at that time. The winter of 1952-1953 has been mild. Freezing temperatures occurred on a total of 11 days - 2 days in November, 4 days in December, 3 days in January and 2 days in February. The lowest temperature recorded for the winter was 21 degrees on January 16, 1953. The mild winter and the activity in the hibernation cages during the first three months of 1953 indicate that boll weevil survival in the central Texas area can be expected to be high this year. (C. R. Parencia).

Cotton Fleahopper Hibernation and Survival Studies at Waco, Texas:

Collections of two species of croton were made between November 26 and December 7, 1952 in the central Texas area for cotton fleahopper survival studies during 1953. One hundred *Croton texensis* plants were collected from one location in each of Bell, Coryell and Bosque Counties. One hundred *Croton capitatus* plants were collected from one location in each of McLennan, Falls, Limestone and Hill Counties. The host plants (100 plants per cage) were installed in emergence cages on February 16, 1953. The first cotton fleahopper emergence from the cages occurred on March 14. A total of 7,269 cotton fleahopper nymphs emerged during March. In 1952 first emergence occurred March 20 and total emergence for March was 1583. There was no emergence during March of 1951 and 1950. Collections of host plants and locations were the same for all years. First-instar nymphs were found on seedling croton plants in the field on March 20, 1953. Subsequent inspections in several locations indicate that early hatch, survival, and development in the field is greater than usual. With weather conditions pointing to an early spring and existing improved moisture conditions, alternate host plants (evening primrose and horsemint) will probably develop and mature early, resulting in early migration of cotton fleahoppers to cotton in the central Texas area this year. (C. R. Parencia).

THE MORE IMPORTANT FOREST INSECTS IN 1952 - A SUMMARY

Prepared by the Division of Forest Insect Investigations

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This report on the more important forest insects in the United States and Alaska in 1952 is a compilation of information obtained from forest surveys and miscellaneous reports. Numerous records that were received of minor outbreaks of less important species are not presented in this summary. The Division of Forest Insect Investigations has personnel assigned to survey activities in ten field stations throughout the forested areas of this country and a sub-station in Alaska. Records from these sources and those obtained from cooperators in Federal land-managing agencies, State entomologists and forestry agencies and a large number of private timberland owners and operators have been used in this summation. The summary would not have been possible without this excellent cooperation.

As a result of these surveys control operations against epidemic outbreaks have been successfully carried out in various parts of the country. Analysis of survey information also made it possible to determine the declining nature of some outbreaks which made it unnecessary to institute control projects. Each year of these expanded cooperative surveys brings nearer the time when a rather complete picture of forest insect conditions will be available annually on a nation-wide basis.

ENGELMANN SPRUCE BEETLE (Dendroctonus engelmanni Hopk.) - The outbreak of Engelmann spruce beetle that has been in progress in Colorado since 1943 has been reduced to endemic status over practically the entire area. The control program initiated on the Arapaho , Routt and White River National Forests in the spring of 1950 together with natural control factors, both biological and climatological, has been responsible. Temperatures as low as -50 degrees F. in Colorado during February of 1951 resulted in the death of most larvae above snow cover. Feeding by woodpeckers was extremely heavy on the lower stems when the snow receded. This reduced the extent of chemical spraying as it then could be limited to the bases of infested trees. The 1952 spraying program was greatly reduced as it was possible to remove entire areas from consideration. There are now only a few areas where it is felt that populations could again reach epidemic proportions in 1953. It is planned to perform control work in these areas if necessary and survey the major outbreak area to determine if any epidemic tendencies exist.

A violent windstorm in 1949 blew down large numbers of spruce trees over a wide area in western Montana and northern Idaho. The Engelmann spruce bark beetle developed in the down trees and by July of 1952 had created a severe outbreak in standing timber. The infestation is scattered from central Idaho to the Canadian border and from northern Washington to the Continental Divide in Montana. Surveys were first directed into areas where detection reports had indicated obvious serious conditions. Other areas were scheduled for detection and appraisal surveys as rapidly as possible. The results obtained up to the onset of heavy snow conditions, which stopped activity, revealed that there are about 800,000 trees infested with a volume of 588 million board feet. About 80 percent is federally owned. It is estimated that of the 12-1/2 billion feet of spruce in the region about one-half is threatened by this outbreak.

The Engelmann spruce beetle is active in Arizona and New Mexico. Several areas of high loss were discovered in the White Mts. of Arizona and the Sangre de Cristo and San Pedro Mts. of New Mexico. Only localized infestations of D. engelmanni are present in the intermountain states of Utah and southern Idaho. Several small control operations in a blowdown area, and in connection with a logging operation, have been conducted to reduce populations in these areas that might serve as focal spots for build-up.

DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae (Hopk.)) - A special cooperative survey was made during the summer of 1952 to determine the location and volume of timber mortality caused by recent severe windstorms and an associated epidemic of the Douglas-fir beetle in western Oregon and southern Washington. The survey revealed that the combined loss from the 1950-51 blowdown and 1951 attacks of the Douglas-fir beetle was 10 billion board feet. This constitutes the most serious damage to stands of the Douglas-fir region since the disastrous Tillamook Burn of 1933. It is expected that, if the beetle infestation runs its normal course, an additional 2 to 5 billion board feet of Douglas-fir saw timber will be killed. Large-scale and timely salvage can materially reduce this prospective mortality. Some killing has occurred outside of the surveyed area. The combined Douglas-fir surveys recorded a total of 4,570,130 acres of epidemic infestations of this insect in Oregon and Washington in 1952. With part of the Douglas-fir region in both states still unsurveyed, these figures probably represent a conservative estimate of the total acreage involved in this unprecedented epidemic. In the northern Rocky Mountain area the Douglas-fir beetle has been causing considerable mortality in recent years. The species is normally present in all stands, periodically reaching epidemic level. Surveys on eight National Forests in this area in 1952 revealed losses ranging from .21 (considered normal) to as high as 6 percent of the trees in the stand. Loss of Douglas-fir resulting from attacks by this beetle is a serious drain upon the resource.

The Douglas-fir beetle has been the most destructive forest insect in southern Idaho during the past 2 or 3 years. Group killing from a few trees to 10 or more acres have been spotted by aerial reconnaissance in nearly all stands of Douglas-fir on several forests. Five large areas on the Boise, three on the Payette and one on the Salmon National Forests were noted as having especially heavy losses. Not all forests were surveyed during the year so the complete reconnaissance information is not yet available.

This beetle continues to cause concern in Shasta County in California where a spectacular expansion of its destructiveness was observed last year. Suppressive measures were effective but need to be extended to include less accessible areas which have not received treatment. Indications are that conditions favor large beetle populations and further trouble may be in store in 1953.

Douglas-fir mortality in varying amounts was also noted in several areas throughout the Southwest during the course of aerial reconnaissance. Concentration of losses was noted locally in portions of northern and southern Arizona and in northern New Mexico. Due to the limited amount of Douglas-fir timber in these local areas, it is not expected that serious losses will continue.

WESTERN PINE BEETLE (*Dendroctonus brevicomis* Lec.) - Extensive group-killing of ponderosa pine by the western pine beetle was reported in 1951 for the first time in 10 years in Oregon. Surveys conducted in 1952 revealed even larger outbreaks of this notorious tree-killer, a total of 185 centers of epidemic infestation covering 673,790 acres being recorded. The largest concentrations were found on the Yakima and Warm Springs Indian Reservations, and on the Deschutes, Ochoco and Fremont National Forests. The situation on the Yakima Indian Reservation is quite alarming. Groups of 40 to 50 trees killed in 1952 were marked on the survey plots and estimates of the total losses for the year are as high as 200 to 400 trees per section in the heaviest centers of infestation. Tree killing by this beetle is at a normal level throughout most of the range of its host, ponderosa pine, in California. Notable exceptions prevail in forested recreational areas in southern California and in old growth stands in northeastern California.

A mixed infestation by the western pine beetle and the mountain pine beetle in pondersoa pine on the Boise National Forest in Idaho has been reduced to a very low level by control operations during the past two years. It is believed that further losses can be avoided by scheduled logging operations.

MOUNTAIN PINE BEETLE (*Dendroctonus monticolae* Hopk.) - Several young stands of ponderosa pine in California and western Nevada are currently infested by this beetle. Losses remain high in second-growth ponderosa pine at Crystal Bay, Lake Tahoe, Nevada, but an outbreak in the Miami Creek drainage of the Sierra National Forest in immature sugar pine has diminished following control work performed last spring. The beetle is causing only light loss in most old-growth pine stands. Examination of areas on the Wasatch and Ashley National Forests in Utah where 335,000 lodgepole pines have been killed by mountain pine beetle since 1946 showed a sharp decrease in number of attacks. Some 270 centers of epidemic outbreaks in lodgepole pine, western white pine and sugar pine, covering 270,740 acres, were recorded in 1952 in Oregon and Washington. The largest concentrations are found on the Wenatchee and Snoqualmie National Forests in Washington, and the Deschutes National Forest in Oregon. The largest single outbreak is on the Wanoga Butte area of the latter forest and has been in existence for several years. Because of the threat that this epidemic presented to the extensive lodgepole pine stands in the Deschutes and Klamath basins, salvage of the dead and dying timber was recommended and a small amount of salvage logging was carried out in 1951. Fortunately, this epidemic has not expanded during the past three years but the threat of expansion still exists. An outbreak in lodgepole pine stands on the Kootenai and Cabinet National Forests and private holdings in Montana has been greatly reduced during the past few years. Surveys indicate the need for further work. While considerable losses have resulted from infestations in white pine forests in Idaho populations of this species did not increase in intensity during the year although it poses a constant threat to these stands.

BLACK HILLS BEETLE (Dendroctonus ponderosae Hopk.) - The Black Hills beetle in ponderosa pine on the Dixie National Forest and adjacent Bryce Canyon National Park in southern Utah continues to be aggressive. Direct control work has reduced the severity of loss but epidemic conditions have developed rapidly in areas where not control has been applied. The Black Hills beetle is active in many areas of Colorado and also in Wyoming. In most areas there could be severe flare-ups. On the Roosevelt National Forest where the cold weather of 1950-51 greatly reduced populations there are centers that could become epidemic. At Story, Wyoming, an outbreak is now commanding the attention of state authorities and private owners in a high-use recreational area. Small centers of rather high-level populations have been found on other National Forests in Colorado. A few small centers of infestation by the Black Hills beetle were found in northern New Mexico, although this insect is currently causing little damage elsewhere in the Southwest.

JEFFREY PINE BEETLE (Dendroctonus jeffreyi Hopk.) - Usually a pest causing scattered loss, the Jeffrey pine beetle assumed a new role this year in several stands of Jeffrey pine in California. Heavy outbreaks occurred in Lassen Volcanic National Park and in Plumas County where epidemic group-killing is now common. Surveys indicate that 3.7 million board feet of Jeffrey pine were infested in one epidemic covering 20,000 acres. The area involved is the only extensive virgin pine stand in eastern Plumas County.

RED TURPENTINE BEETLE (Dendroctonus valens Lec.) - In most instances this beetle does not kill trees but often its attack is followed by other bark beetles which thoroughly girdle the trunk resulting in the death of the tree. Damage is currently very severe in several campground areas in Lassen Volcanic National Park in California. This beetle also has attacked many reserve ponderosa pines in stands recently logged on the Payette National Forest in Idaho. Some of the infested trees are nearly girdled by the galleries which often extend from ground line to a height of 8 or 10 feet. Some of the weakened trees have been attacked by the western pine beetle.

BLACK TURPENTINE BEETLE (Dendroctonus terebrans Oliv.) - Surveys within 6 counties of northeast Florida in 1952 showed that the black turpentine beetle was present in considerable numbers in localized areas but attacks, even in these areas, had diminished during the last five months of the year. Rather heavy populations with resultant serious damage persisted, however, in parts of the Osceola National Forest. Damage here has been sufficiently severe to force clear-cutting of some pond areas except for seed trees. Attacks were made primarily on slash pine but longleaf pine suffered attacks in some areas.

SOUTHERN PINE BEETLE (Dendroctonus frontalis Zimm.) - In the southeastern part of the country the southern pine beetle has been active in very limited areas during 1952. Relatively small areas were found on the Apalachicola National Forest in Florida; near Peabody, Kentucky; Franklin, Virginia; and in the Great Smoky National Park. In May of 1952, however, an outbreak of southern pine beetle was noted in southwestern Mississippi covering pine stands in 7 counties. The epidemic involves federal lands, large corporation holdings, and small private blocks of timber. Cooperative control work was started almost immediately by a combination of salvage and chemical spraying of unmerchantable logs and lopped tops. By autumn on national forest holdings along 8,782,000 board feet of infested sawtimber had been salvaged and 4,679,000 board feet equivalent of pulpwood had been sold. The outbreak has been greatly reduced in severity but because of multiple broods of this beetle, surveys and control action are continuing.

OTHER DENDROCTONUS BEETLES. Severe mortality in ponderosa pine has occurred in local areas throughout most of the forested area in New Mexico and Arizona as a result of attacks by several species of pine bark beetles (D. barberi Hopk., D. arizonicus Hopk., D. approximatus Hopk., D. convexifrons Hopk.). Extreme drought conditions during 1950 and 1951 undoubtedly created circumstances favorable for the increase of these destructive forest pests and the resultant heavy loss, and despite a return of normal precipitation in 1952, the beetles have continued to cause heavy tree mortality where epidemic populations exist. Although many of the most heavily damaged areas were found on marginal sites occupied by the fringe-type mixture of ponderosa pine, pinon pine, and juniper, other outbreaks occurred on better sites, indicating an upward trend of current infestations.

ENGRAVER BEETLES. Extensive damage to stands of silver fir in northwestern Washington has been caused by species of fir engraver beetles, particularly Pseudohylesinus sp. Some 43 centers of epidemic infestation covering 162,440 acres in 1952 have been recorded by surveys; however, additional centers of infestation are known to exist on the unsurveyed Mt. Baker National Forest. The largest concentrations of these beetles were on the Olympic National Forest. Severe tree-killing by these fir engraver beetles in the upper slope types throughout the region, has been reported by observers and recorded during the surveys. Salvage of the commercially valuable timber is the only control recommended at this time. Killing of true fir species by the fir engraver, Scolytus ventralis Lec., in the Sierra Nevada Mountains and in southern California attained very serious proportions in inaccessible locations. The magnitude of the loss greatly exceeds the destruction by this beetle during any single year in the last two decades. A serious infestation of this fir engraver beetle is present on the east slope of the Sandia Mountains in central New Mexico. This outbreak began in 1948 in slash created by clearing a ski slope. The infestation in 1952, estimated at 6,000 trees, has apread to an area of approximately 2,000 acres. Damage by this insect is not severe elsewhere in the Southwest although mortality of white fir was noted in several scattered areas during the course of aerial reconnaissance.

IPS ENGRAVER BEETLES (Ips spp.) - Large areas of pinon pine suffered severe mortality throughout portions of New Mexico and Arizona as a result of drought during 1950. Ips beetles readily attacked these drought-killed trees and developed large populations during 1951 and 1952. As a result, these insects are now attacking and killing large numbers of vigorous trees in the vicinity of all drought areas despite a return to normal precipitation conditions during 1952. The Ips beetles emerging from the pinon pine appear to be attacking and killing ponderosa pine in adjacent pine stands but the broad nature of infestations in the pinon pine type precludes control to prevent attack and loss of ponderosa pine. The current heavy population is expected to subside within the next few years, similar to other short-lived infestations of the past. Tree-killing as a result of Ips attacks was not found to be severe in other stands throughout the Southwest. These insects have been very active in many pine stands in the southern States causing considerable losses in some areas. Drought conditions have contributed to the seriousness of the situation.

WEEVILS. Killing by the reproduction weevil (Cylindrocopturus eatoni Buch.) in two northern California pine plantations appears to have returned to normal following aerial spray control conducted last spring. This weevil can be extremely destructive in plantings of pines. The white-pine weevil (Pissodes strobi (Peck)) is a serious pest of pines in the northeastern States. All states reported apparent increases in damage with percentage of trees attacked ranging from 3 to 18 percent. The weevil attacked some jack-pine plantations in lower Michigan with damage averaging 33 percent of the stands in some cases.

CALIFORNIA FLATHEAD BORER (Melanophila californica Van D.) - The larvae of this woodborer are found in many healthy appearing pine trees where their development is extremely slow until the living processes of the host trees are subjected to severe strain as during extended droughts. Larval activity tends to weaken and predispose their host to attack by faster working bark beetles. However, in some years, outright killing is accomplished by the "flatheads." Instances of such killing are quite widespread in several localities in southern California.

SPRUCE BUDWORM (*Choristoneura fumiferana* (Clem.)) - The spruce budworm has been in epidemic status for the past few years in Oregon and Washington in the Douglas-fir and true fir forests. Four aerial spraying projects to control the worst epidemic areas have treated 2,793,000 acres during the period 1949-1952. The control operations have been effective in preventing the killing of trees on the areas that have been sprayed. Surveys in 1952 revealed that new centers of epidemic infestation have developed in previously unsprayed forests in several areas in Oregon and Washington. Throughout most of the Blue Mountain area, in both of these states, there has been a marked enlargement and intensification of the unsprayed centers of epidemic infestation. The total acreage of infestation in Oregon and Washington in 1952 was recorded as 1,578,560 acres.

In 1952 spruce budworm conditions in the northern Rocky Mountains were characterized by a widespread increase in area of most existing infestations; extensive tree damage along the eastern slope of the Continental Divide in central Montana; an apparently completely decline of a 10-year outbreak in the South Fork of the Flathead River in Montana; and a similar disappearance of an infestation in Engelmann spruce in Glacier National Park. The total infested acreage in 1952 was about 1,900,000 acres, an increase of 735,000 over 1951. Of this total acreage damage on approximately 132,000 acres is classified as heavy. As yet relatively few forests have sustained serious damage but in the centers of several heavy areas feeding over the past 3 or 4 years has effected top killing on some trees and has killed many smaller trees in the understory. Defoliation of small trees has been serious in some areas where they are normally cut for Christmas trees. An area of 12,000 acres in Montana was sprayed by airplane in 1952 to prevent serious killing of timber in an epidemic center.

The spruce budworm was the most prevalent defoliator in the intermountain states of Idaho and Utah. Defoliation severe enough to be readily observed from the air occurred on nearly 500,000 acres on the Boise and Payette National Forests in Idaho. Areas of heavy defoliation are larger than those noted in 1951. A localized infestation is present in the Dixie National Forest in southern Utah. Severe defoliation of fir and spruce timber occurs throughout most of the spruce-fir types of Arizona and New Mexico. Tree-killing as a result of these infestations appears to be imminent only in local areas, although heavy defoliation is known to occur on an estimated total of 200,000 acres in the region.

The spruce budworm has gained such notoriety in other western states recently that surveys are constantly on the alert for its presence in California. Budworm-caused defoliation was observed this year in white fir and lodgepole pine stands in the North Warner Mountains in Modoc County. An infestation has persisted there for many years but damage has been too slight to justify control action.

Noticeable defoliation of balsam fir in Maine in 1952 was confined to two large areas in the northern part of the state totalling 416,000 acres, of which 326,000 acres showed scattered defoliation and 90,000 continuous defoliation. While no tree mortality attributable to defoliation was found, some top killing has occurred. In the neighboring state of Vermont, budworms were found in very small numbers in a few locations.

Jack-pine budworm (Choristoneura sp.) occurred in widespread epidemic status during 1952 in north-central Michigan. In many of the older outbreaks the intensity of defoliation declined but increases in feeding were noted in other areas in Michigan. Thus far, little tree mortality has occurred in mature jack-pine stands but heavy damage has been noted in some areas to jack-pine and white pine reproduction in the understory.

LOOPERS. An infestation of the New Mexico fir looper (Galenara consimilis Hein.) on Douglas-fir and white fir has caused severe damage of commercial timber in the vicinity of Agua Chiquita in the Sacramento Mountains of southern New Mexico. The combined feeding of this defoliator in conjunction with infestations of the spruce budworm has resulted in severe defoliation in local areas. A fir looper (Melanolophia imitata (Walkr.)) occurred in outbreak form in Idaho over an area of 180,000 acres. This is the second known instance of this species in epidemic numbers in the area. The past outbreak subsided with little actual damage. A hemlock looper (Lambdina athasaria athasaria (Wlkr.)) defoliated over 300 acres of hemlock in eastern Massachusetts with some tree mortality resulting. Local infestations of 50 to 400 acres have been reported from Pennsylvania.

Epidemic outbreaks of the western hemlock looper (Lambdina fiscellaria lugubrosa Hulst)) totalling 12,720 acres, were recorded in Washington;

however, the large stands of hemlock in northwestern Oregon and southwestern Washington, which could support aggressive outbreaks of this potentially destructive defoliator, have not been surveyed. An epidemic in Clallam County, Washington, which started in 1949, has been given special attention on each year's survey. In 1952, 40 centers covering 10,720 acres were recorded in this area. At present, the activities of the looper are considered to be non-aggressive but the situation must be kept under close observation. Salvage logging of the dead and weakened timber in this area is progressing rapidly. A new center of defoliation covering 2000 acres was recorded in 1952 in Wahkiakum County, Washington.

Cankerworms. Surveys in 1952 in western North Carolina revealed 33 areas totalling nearly 14,000 acres of hardwoods that had been defoliated by cankerworms, primarily fall cankerworm (*Alsophila pometaria* Harr.). Other species found were *Erannis tiliaria* (Harr.) and *Phigalia titea* (Cram.). Of these areas, 3,660 acres were heavily defoliated.

MISCELLANEOUS DEFOLIATORS. Forest tent caterpillar (*Malacosoma disstria* (Hbn.)) increased generally throughout the Lake States. A widespread outbreak was in progress over 15,000,000 acres of forest land in northern Minnesota during 1952. The outlook for 1953 is for extension of this outbreak. In Michigan aerial surveys showed 1,132,000 acres defoliated, principally in the upper peninsula. Small outbreaks were found in Wisconsin. A serious outbreak of the forest tent caterpillar has also developed in northern New York. In 1952 the infestation covered over 3-1/2 million acres, with heavy defoliation over more than 500,000 acres.

Gypsy moth (*Porthetria dispar* L.) increased rapidly in abundance during the calendar year 1952 and there were 293,052 acres from 25-100% defoliated throughout the New England States during late June and the month of July as compared with 21,314 acres similarly affected in the summer of 1951. The deposition of eggs was considerably heavier than in many years and the present outlook is for a further material increase in defoliation with resultant heavy damage to forest growth in the summer of 1953. There was a slight westward spread in the Adirondack section of New York. No infestation has been found in New Jersey since 1935 and the only living infestation known to exist in the State of Pennsylvania, following control operations of the past years, was discovered as the result of capturing a male moth in a trap in Milford Square, Bucks County, Pennsylvania. This small infestation, totalling nine egg clusters, will be treated and eradicated by spraying to be conducted early in the spring.

Great Basin tent caterpillar (*Malacosoma fragilis* Stretch.) has occurred in epidemic proportions throughout the aspen stands in northern New Mexico for several years and although defoliation has been severe, control has not been warranted in most of the area because of the low timber value. Annual application of DDT by mist blower has been successful in preventing severe defoliation in heavily-used recreational areas. This species defoliated about 20,000 acres of aspen on the San Isabel National Forest in Colorado. Another area of 5,000 acres in the same general locality was defoliated. Egg deposition during 1952 indicates continued heavy infestation. Another heavy infestation was recorded on the Rio Grande National Forest also in Colorado.

An outbreak of the walkingstick (*Diapheromera femorata* (Say)) occurred in western Maryland in 1952. The presence of this odd-appearing insect caused considerable interest and comment. An aerial survey revealed about 500 acres of hardwoods that had been severely defoliated. It is likely that there are populations surrounding the more heavily defoliated areas but the damage, if any, was too slight to be visible from the air. Several smaller outbreaks were reported from Pennsylvania.

The fir needleminer (*Epinotia meritana* Hein.) in Bryce Canyon National Park, Utah has been damaging the foliage of white fir for several years. Attempts to control it by aerial spraying with DDT apparently effected considerable reduction in population.

Heavy infestations of lodgepole needleminer (*Recurvaria milleri* Busck.) are present on the Targhee National Forest in Idaho. Little permanent damage has occurred as yet although there is danger of subsequent bark beetle damage. Past outbreaks of the lodgepole needleminer in California have occurred mainly at high altitudes in Yosemite National Park. The great lodgepole "ghost forests" of Tenaya Basin resulted in large part from defoliation caused by needleminer feeding followed by bark beetle attacks. The current outbreak dates back to 1947. The two-year life cycle of the insect results in heaviest defoliation being evident in alternate years. Damage during 1953 is expected to be heavy.

SAWFLIES. An outbreak of an unknown sawfly, probably Neodiprion sp., on shortleaf pine in commercial-size timber was discovered in southwest Alabama late in the summer of 1952. According to reports the present known infestation is distributed over an area approximately 5 miles wide and 30 miles long. Defoliation varied greatly reaching heavy proportions on localized small areas. It was estimated that 5 to 10 percent of the pines within the infested area was heavily defoliated. It is probable that the infestation is more extensive than these preliminary reports indicate. Subsequent surveys will determine the limits of this outbreak. Several small areas of pine were defoliated early in the summer of 1952 by a sawfly, Neodiprion americanus, in eastern Virginia. The loblolly pine sawfly (Neodiprion sp.) continues its activities at a moderate intensity in southern Arkansas but appears to be increasing in numbers in northern Louisiana and extending its distribution, or building up to observable level, in southern Louisiana and eastern Texas. Severe defoliation was recorded on 100,000 acres in Louisiana.

A severe epidemic of lodgepole sawfly (Neodiprion burkei Midd.) covering 19,820 acres on the Willamette and Deschutes National Forests in Oregon was recorded in 1952. Rearings of several thousand cocoons of this insect yielded less than one percent parasitism, which indicates that a large and aggressive population of sawflies will probably be present in this same area in 1953. It is quite likely that defoliation will be severe enough to cause extensive tree killing. Part of the affected area is quite high in recreational value but the area in general is low in timber values.

Sawflies have occasionally been observed defoliating various conifers within the State of California. However, damage caused by them has never before been serious. This year, reports of sawfly infestations were unusually numerous. In one area of Plumas County these insects caused severe defoliation during the summer on 5,000 acres of dense second-growth white fir. Their habit of feeding upon needles of all ages makes it probable that many trees will die.

Larch sawfly (Pristophora erichsonii (Htg.)) continued in epidemic status in northern Minnesota. Approximately two-thirds of 435,000 acres of infested larch showed heavy defoliation. No tree mortality has been noted as yet. In northern Wisconsin the sawfly was found in the northern counties lightly defoliating trees in some areas.

MISCELLANEOUS. Saratoga spittlebug, Aphrophora saratogensis (Fitch), is still a problem in pine plantations in Wisconsin and Michigan. Areas on several National Forests show a reduction in tree growth and some mortality due to feeding by this species. Larch casebearer (Coleophora laricella (Hbn.)) is present throughout central and northern Wisconsin and in Michigan the trees had an overall brownish appearance because of their feeding. An unknown species of Matsucoccus scale continues to spread in Connecticut. During the last 6 years it has spread over about 45 square miles affecting red pine. During this time it has killed a total of 25 or more acres of pine. No methods of control have yet been developed. The species has been found on Long Island and in Westchester County in New York.

ALASKA

An annual survey program for evaluating forest insect conditions in Alaska was initiated during mid-summer of 1952. The initial survey was directed very largely against the BLACK-HEADED BUDWORM, Acleris variana (Fern.), on the Tongass National Forest. The present epidemic extends over approximately 11,640,000 acres. Western hemlock (Tsuga heterophylla) is most seriously defoliated but some feeding occurs on Sitka spruce and mountain hemlock. Heavy defoliation covers an area of 8,040,000 acres. Hemlock sawfly, Neodiprion tsugae Midd., is causing heavy defoliation in conjunction with the black-headed budworm in several areas on Prince of Wales Island. The presence of both species in the same stands is serious because the budworm feeds on the new needle growth while the sawfly feeds on the older foliage.

The establishment of the survey in Alaska will furnish current information on forest insect conditions in Alaskan forests. Only a short period of time was available for surveys during the summer of 1952. Future reports should give a comprehensive picture of conditions in Alaskan forests that has not previously been available.

3450
19
3469
1500
350
84.69
572
90.41

10885
9041
18.44
9041
108.85

19
2
38

1144

5.50
22
572